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Extended essay cover

Diploma Programme subject in which this extended essay is registered: Wald Studies

(For an extended essay in the area of languages, state the language and whether it is group 1 or group 2.)

Title of the extended essay: Investigating the social implications, health risks, ecological impact, and ethical issues linked to the overpopulation of feral cats in Australia.

Candidate's declaration

This declaration must be signed by the candidate; otherwise a grade may not be issued.

The extended essay I am submitting is my own work (apart from guidance allowed by the International Baccalaureate).

I have acknowledged each use of the words, graphics or ideas of another person, whether written, oral or visual.

I am aware that the word limit for all extended essays is 4000 words and that examiners are not required to read beyond this limit.

This is the final version of my extended essay.

Supervisor's report and declaration

The supervisor must complete this report, sign the declaration and then give the final version of the extended essay, with this cover attached, to the Diploma Programme coordinator.

Name of supervisor (CAPITAL letters)

Please comment, as appropriate, on the candidate's performance, the context in which the candidate undertook the research for the extended essay, any difficulties encountered and how these were overcome (see page 13 of the extended essay guide). The concluding interview (viva voce) may provide useful information. These comments can help the examiner award a level for criterion K (holistic judgment). Do not comment on any adverse personal circumstances that may have affected the candidate. If the amount of time spent with the candidate was zero, you must explain this, in particular how it was then possible to authenticate the essay as the candidate's own work. You may attach an additional sheet if there is insufficient space here.

's choice to complete a World Studies Extended Essay came as no surprise; she has been involved in the School's Green team (raising awareness about environmental matters) for four years and dedicated time and energy to gain and share knowledge about the world in which she lives. She is one of our truly global citizens in the making. Her work ethics, time management skills and analytic mind enabled her to produce an essay that reflects on her insight and in depth knowledge.

This declaration must be signed by the supervisor; otherwise a grade may not be issued.

I have read the final version of the extended essay that will be submitted to the examiner.

To the best of my knowledge, the extended essay is the authentic work of the candidate.

I spent

5

hours with the candidate discussing the progress of the extended essay.

Assessment form (for examiner use only)

Criteria	Achievement level					
	Examiner 1	maximum	Examiner 2	maximum	Examiner 3	
A research question	2	2		2		
B introduction	1	2		2		
C investigation	2	4		4		
D knowledge and understanding	2	4		4		
E reasoned argument	2	4		4		
F analysis and evaluation	2	4		4		
G use of subject language	2	4		4		
H conclusion	2	2		2		
I formal presentation	3	4		4		
J abstract	2	2		2		
K holistic judgment	2	4		4		
Total out of 36	22					

Candidate name:
Candidate number:

Investigating the social implications, health risks, ecological impact, and ethical issues linked to the overpopulation of feral cats in Australia



Feral cat. Fig.1¹

May 2014
World Studies

Word count: 3156

¹ Photograph. Web. 28 Oct 2013. <<http://theferalcatcause.cfsites.org/files/africanwildcat.jpg>>.

Candidate name:
Candidate number:

Abstract

Feral cats are an arising issue that has become more important in the recent years, especially in Australia, New Zealand, and many islands around the world. My research question is **"Investigating the social implications, health risks, ecological impact, and ethical issues linked to the overpopulation of feral cats in Australia"**. I wanted to find out the source of the problem, the extent of the problem, and the possible solutions so I could have a more informed opinion on the issue.

The topic overlaps biology, environmental systems and societies, and geography, in areas that concern human impacts on the environment.

Surveys were carried out over forums and enquiries were sent to several organisations to collect information over the matter first hand. Then research was undertaken to thoroughly understand the topic. Most of the secondary research is taken from publications found through the internet and databases.

Feral cat overpopulation is the cause of human activity since we used them as pest control, although uncontrolled. The main problem with feral cats is their threat to native species, especially small mammals. The most effective way to deal with feral cats at the moment is through trapping and shooting, depending on the efficiency, the humanness may vary.

Word Count: 202

Candidate name:
Candidate number:

Acknowledgements

Thank you to _____ from Department of Sustainability, Environment, Water, Populations and
Communities, and _____ from the Australian Wildlife Conservancy for answering my emails.
As well as the people who replied to my forum po

Candidate name:
Candidate number:

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Candidate name:
Candidate number:

Introduction

Animals have been domesticated for thousands of years, and while agricultural domestication has led to the survival of many species (as in the animal species have become more populous than they would be in the wild), this often comes with a cost. For example: while the meat industry has caused the population of turkeys etc to be much higher than it would be in the wild, meat turkeys, however, can no longer reproduce naturally due to their excessive weight, a feature that has been selectively bred by breeders over hundreds of years.²

One might assume domestication of animals for consummation or companion is a win-win situation. We 'keep' the animal, that are of interest for us, either as a source of food, to help us in our chores, or to give us company. It would be a win-win situation as in return we offer them shelter, health care, comfort, and well being. What worries me is that this is not the case nowadays, and perhaps we should think about the consequences.

One such consequence is the ill management of breeding and keeping of domestic cats that leads to a large number of feral cats (such as the one shown in fig.1). This problem is more extreme in Australia, the number of cats (feral and kept as pets) in Australia right now is threatening the local bird species as many of the bird species are flightless, as well as other wildlife and I would like to **Investigating the social implications, health risks, ecological impact, and ethical issues linked to the overpopulation of feral cats in Australia.**

I am Taiwanese, and a lot of stray animals can be seen whenever I visit in the summer, as well as packs of stray dogs in certain areas. There is a lack of awareness about breeders, and the cheap access to cats and dogs that were bred in mills causes heartbreaking and unnecessary deaths as the policy concerning the issue is not strict.³ I want to research on this topic to understand how another country would approach the situation, and perhaps I can use this information in the future.

² Safran Foer, Jonathan. *Eating Animals*. Penguin, 2009. Print.

³ Hsu, Yuying, Lucia Liu Severinghaus, and James A. Serpell. "Dog Keeping in Taiwan: " *Its Contribution to the Problem of Free-Roaming Dogs*. Journal of Applied Animal Welfare Science. Pdf.

1. Origin of domestication

The earliest animal to be domesticated, for its ability to learn and carry out commands rather than for a source of food was the wolf (*Canis lupus*), this happened at least 15,000 years ago⁴. The earliest domesticated animals for food were goats and the sheep at least 9,000 years ago, followed by domestication of pigs and cattle. Gautier defined domestication as "a microevolutionary process and a form of cultural control over animals, implying that these creatures are forced to live and multiply in captivity; as a result they acquire domestic traits"⁵.

I wish to establish the difference between domesticated and house cats (owned). Domesticated cats are those that are no longer in the same species as wild cats, so any cat of the genus *Felis catus*. Within the genus, I will be distinguishing between indoor cat, outdoor cat, stray cat, and the feral cat. Indoor and roaming cats are those that belong to a human family, and are the responsibility of the family while stray cats used to have a human family.⁶ Feral cats are not socialised with humans and may belong to a colony of feral cats.

Domestic cats were originally thought to originate from Ancient Egypt around 3,600 years ago.⁷ However, recent studies have shown that cat domestication could have happened as early as 10,000 years ago around the Fertile Crescent (cf. Fig.2), when agriculture started to be more developed. The question lies in why cats were domesticated if they have no direct contribution to men, in that they are not a food source nor can they be trained.



⁸Map of the Fertile Crescent Fig.2

⁴Gentry, Anthea, Juliet Clutton-Brock, and Colin P. Groves. "The naming of wild animal species and their domestic derivatives." . Journal of Archaeological Science, 15 Oct 2003. pdf

⁵A. Gautier, La Domestication. Et l'Homme Crée ses Animaux, Errance, Paris, 1990.

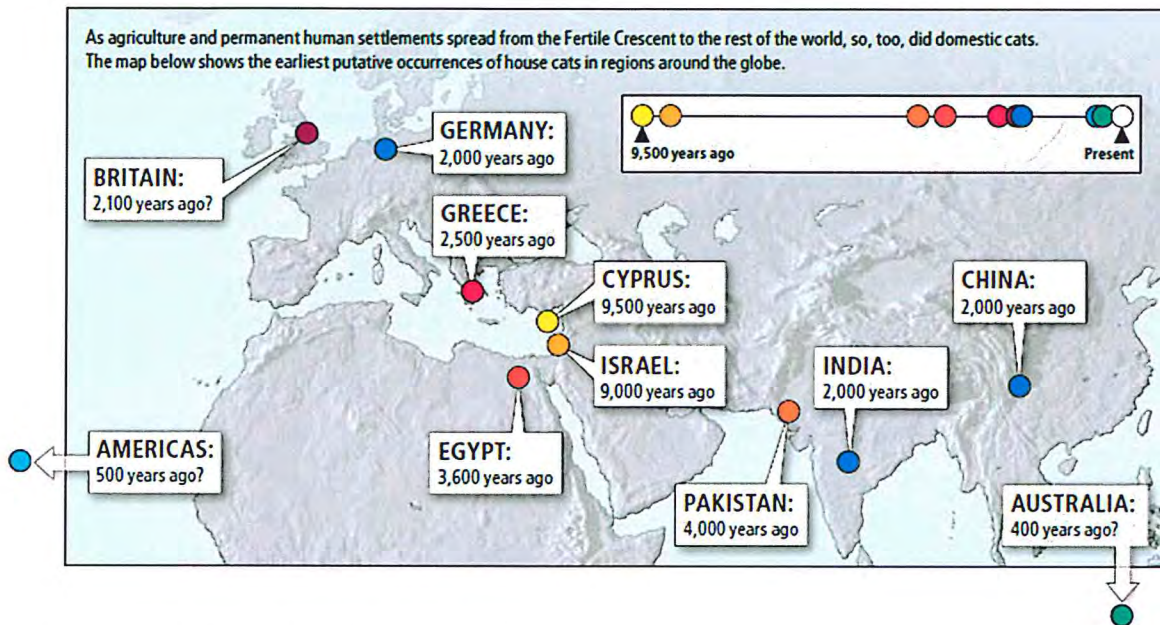
⁶"Feral and Stray Cats—An Important Difference." .Web. 15 Jul 2013. <<http://www.alleycat.org/strayorferal>>.

⁷"Taming of the Cat." . Scientific American, INC., n.d. Web. 15 Jul 2013.

⁸N.d. Photograph. n.p. Web. 15 Jul 2013. <<http://www.mrdowling.com/images/603fertilecrescent4.png>>.

Candidate name:
Candidate number:

Starting in 2000, Driscoll investigated the origin of the domestic cat. The result of his research was that domestic cats arose from the *Felis silvestris lybica*, a subspecies of the *F. silvestris*, also known as the African wildcat, and this happened in the Middle East.⁹ In 2004, Jean-Denis Vigne and his colleagues dug up human and cat bones in Cyprus that were buried together 9,500 years ago, the human and cat were facing the same direction, implying that the cat was kept as a pet (cf. Fig.3). Since cats are not native to the Mediterranean, they must have been brought over by boat, implying that domestication happened earlier.



Map and date of cat appearance. Fig.3 Taming of the Cat

Unlike the animals that were domesticated earlier, the cat's relationship with humans was commensal¹⁰, meaning it is where one organism benefits from the other without affecting the other.¹¹ Cats would feed on the rodents that infested the farms and grain storages. As agriculture in the Fertile Crescent developed around 10,000 years ago, wildlife also adapted. The house mouse, which originated around India, settled into the storages of grain in Israel, thus attracting the wild cat. The reason why *F. s. lybica* is the only subspecies to be domesticated is because they are more tolerant of people, and because they were closer to the first human settlements.

⁹ "Taming of the Cat." Scientific American, INC., n.d. Web. 15 Jul 2013.

¹⁰ A. Driscoll, Carlos, Marilyn Menotti-Raymond, and et al. "The Near Eastern Origin of Cat Domestication." . Scienceexpress, 28 Jun 2007. pdf. 15 Jul 2013. (the original report from taming of the cat)

¹¹ Web. 15 Jul 2013. <<http://dictionary.reference.com/browse/commensal?s=t>>.

Candidate name:
Candidate number:

2. Investigation

2.1 Planning

To start off my investigation, I have sent enquiries to several organisations regarding the issue, and have received feedback from a few. As well as posting questions on two chosen forums. The organisations I chose were official organisations mostly concerned with the protection of wildlife, but I also had the AVA and the Cats Alliance of Australia (although the latter did not reply). This was also to provide multiple standpoints and to see the problem from different points of views.

The questions I asked on the forums and by email are:

1. To what extent do Feral cats have an ecological impact compared to other sources of possible impact.
2. What are the regulations and legal aspects linked to Feral cats management?
3. How do Australian citizens react to the Feral cats issue?
4. What is your organisation's view on the Feral cats issue and the way it should be dealt with?

The first two questions asked towards organisations were so that I can acquire some information about the topic and give me a direction for further research. The third and fourth questions are more opinion based, although most organisations could not answer the third question as they cannot speak for the people. Different organisations have different approaches to the issue, and on the forums, the fourth question raises the most debate.

Below is a table of the organizations I have enquired after:

	Contact	Date sent	Date received
1	Australian Government Department of sustainability, Environment, Water, Population and communities	1 st August	1 st August
2	Cats Alliance of Australia	1 st August	-
3	Australian veterinary association	7 th August	7 th August
4	Australian Environment Foundation	7 th August	-
5	Caring for our country	7 th August	-
6	Animals Australia - the voice for animals	7 th August	-
7	Australian Fauna	7 th August	-
8	RSPCA Victoria	7 th August	-
9	Australian Wildlife Conservancy	12 th August	19 th August

Table of contacts. Fig.4

Candidate name:
Candidate number:

2.2 Survey extracts and Analysis

The two forums I chose are “Cats of Australia – Cat Chat, A friendly online cat community”¹² (cf. Fig.5,7,8) and the “Animals Australia Unleashed”¹³ (cf. Fig.6,9,10). The former is a general (pet) cat forum, and I posted under the ‘cat rescue’ category; the latter is the youth outreach division of Animals Australia, which is one of Australia’s largest animal protection organization, and I posted under ‘eco talk’. I was hoping that these two forums would have different points of views regarding the issue, as one is cat centred while the other has higher regards the native animals.

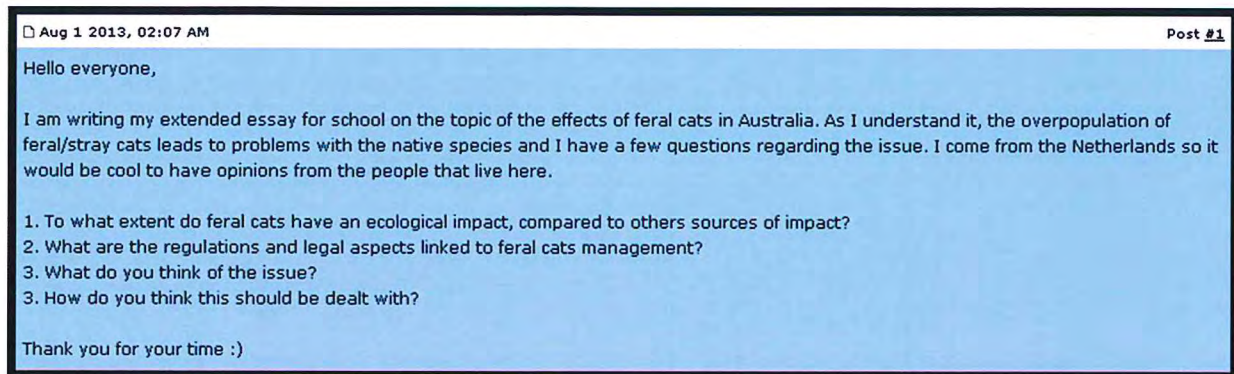


Fig.5 My post on COA

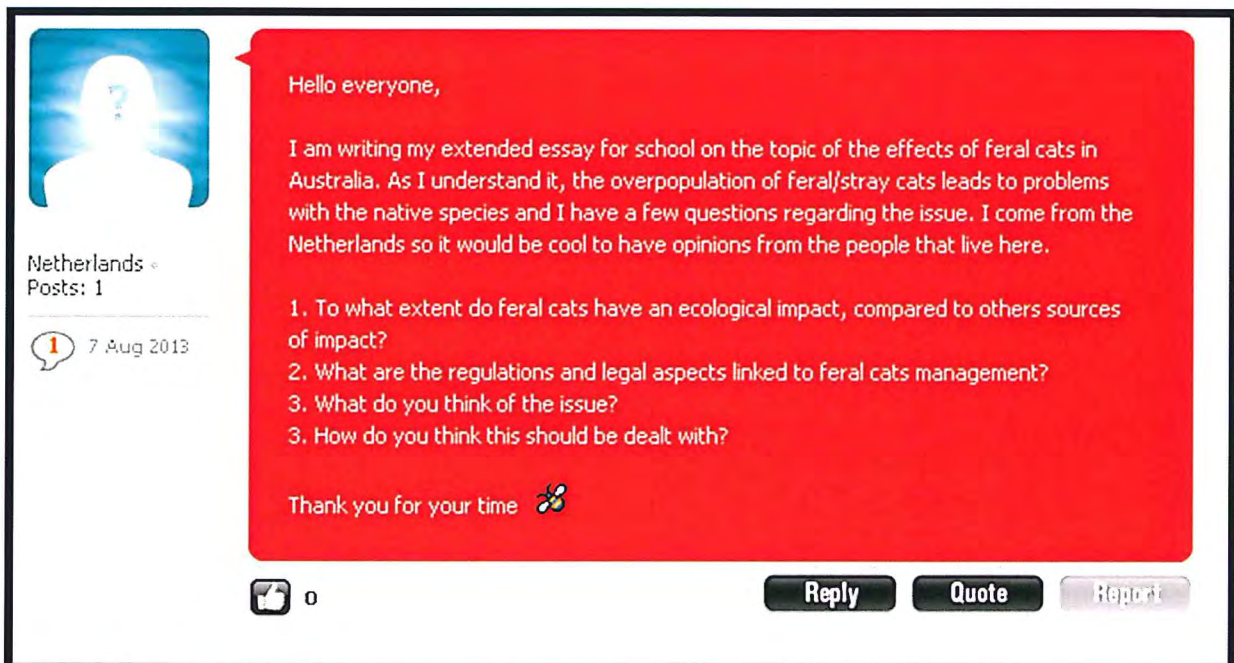


Fig.6 My post on Animals Australia Unleashed

¹² <http://www.catsofaustralia.com/forums/>

¹³ <http://www.unleashed.org.au/>

Candidate name:
Candidate number:

On figure 7 one of the members that replied on my forum thread suggested that “people are more harmful and more feral than cats”, which might be a sign of lack of knowledge from the public (or perhaps miscommunication on my part). But all other replies show in depth understanding of the issue. One person answering about their approach (cf. Fig.9) said “if we were to think about reducing the human race to spare the earth (flora and fauna, etc) what would your actions or opinions be? Would they be any different?” This is very interesting since one the reason why feral cats are difficult to deal with is the ethical issues concerned. The AWC also said “Of course, to many people the cat is a companion animal, so solutions to the feral cat problem must account for this social situation.”

People are more harmful and more feral than cats. Cat's don't directly harm people.

I don't think enough's been done about the feral situation because it's a relatively new problem.

Anyone can control feral cats. But to have them truly controlled first you must make the people glad for it to happen.


Fig.7 Cats of Australia forum response part 1

1. In our area, feral cats are a huge problem. There are huge numbers of them around in some areas. Not only they kill wildlife (birds, reptiles, baby possums, etc.), but they also damage people's properties. Local business people have complained that they get into their warehouses and spray their merchandise with urine; farmers regularly lose chickens to them; etc.
2. Regulations say that people should catch them in traps and bring them to a shelter or "dispose of them". Having a feral cat "disposed of" by euthanasia at a vet's will cost the person who brings the cat in, about \$70. Therefore it is not done. And the next animal shelter that would take them on and pay the cost of humane euthanasia is 260km away. In our council area, the council officers are no longer willing to pick those cats up, as they used to do in previous times, and take care of the "disposal" themselves. Council officers were known in previous times of shooting the cats (and also stray dogs) at the communal waste deposit sites. So have been many farmers. In short, if people rent a cat trap and catch the feral cats, I don't even want to know what happens to them after that. And noone else wants to know either. Most people I know of who have a feral cat issue on their properties will place rat poison in the affected places.
3. This is very sad. And the cause lies in the ignorance of people who keep producing moggie kittens and those who pick up 'free' moggie kittens, consider them as a short-term toys for the kids, and then kick them out of their homes, so they have no other option but to become feral.
4. It should be mandatory by law that all cats must be microchipped in their owner's name and all cats, except of purebred registered breeding cats, must be desexed. There should be heavy fines imposed on people who own or feed a cat without a microchip. If a cat with a microchip is found to be feral and causing damage to others, its owner can be identified and should be fined. All cat or kitten for sale or give-away advertisements must include the microchip number (as it is already law in the State of Victoria). This microchip requirement will make sure that people will have to accept the full responsibility for all the cats or kittens they take on, and that they will take the due care that their cat will not go feral.

Fig.8 Cats of Australia forum response part 2

Both the Department of Sustainability, Environment, Water, Populations and Community; Australian Wildlife Conservancy; and the Australian Veterinary Association regard the issue as being increasingly important. The AWC also considers foxes as a great threat to the native fauna, although in recent years fox populations have declined. The AWC said that another factor which affects predation is the amount of grass cover, which is decreased by fires and/or grazing, so “improved fire management and decrease numbers of introduced herbivores” would also help.

Candidate name:
Candidate number:




Australia • Posts: 1


2 7 Aug 2013

Hey , this is an important issue in Australia and is definitely something that needs to be studied by many people. Feral cats do have an impact on Australia's native ground birds and small animals, however it is hard to know what the extent of this is. It is most likely that feral cats affect the already vulnerable species the most, such as species affected by ecosystem disruptions by humans, or species that have been re-introduced into existing habitats.

Whatever their cause, feral cat numbers do need to be controlled or reduced, and as this is a problem that we started, we have a responsibility to this countries fauna to do all we can to reduce this impact. Humane ideas have been for example trapping the cats and desexing them, then either trying to find a home to them (which would be near impossible for feral cats), or releasing them back into the environment. However this solution is not financially viable, and money spent on this could be spent in other areas that need more attention. Also, these cats can still kill the native wildlife. Other options are shooting, baiting and trapping, and although these do cause the animal harm, it is a cheaper, less time consuming and more effective method in controlling these pests. We owe it to these helpless Australian animals to do whatever we can to help them survive. I hope this helps a bit.

 0

[Reply](#) [Quote](#) [Report](#)




comprends pas
NSW • Posts: 596


3 7 Aug 2013

I have a hard time looking at this issue without first considering the human race as a pest problem. If it were my assessment, I'd manipulate the question, or appeal to my teacher to take another approach, because if we were to think about reducing the human race to spare the earth (flora and fauna, etc) what would your actions or opinions be? Would they be any different?

That's my opinion.

 + 3 [Unlike](#)

[Reply](#) [Quote](#) [Report](#)




SA • Posts: 146

4 8 Aug 2013

This is just speaking from my own personal experience, but I think more effort could be put into the rehabilitation of some feral cats. Cats that haven't been bred in the wild but have escaped into it and young kittens can be domesticated again with some effort. I think there seems to be the perception that they are completely unmanageable once they have gone wild and I don't agree with that. I think feral cat populations could be reduced not by culling, but by intense efforts to rehabilitate some sections of the population and adopt them out.


Also compulsory desexing of all domestic cats.

 0

[Reply](#) [Quote](#) [Report](#)

Fig.9 Animals Australia Unleashed forum response part 1

Candidate name:
Candidate number:



VIC • Posts: 7

5 15 Aug 2013

You've probably done the assignment by now, but further education never hurts.

This is from John Read the Pragmatic Ecologist on facebook;

Some commentators in the media lately seem surprised at the number of feral cats in the Australian bush and the number of native animals they eat. This photo shows some of the critters I counted from 23 cats shot in March by Graham Miller from near waru colonies in the APYlands. 3 fat tailed antechinus, native mice and dunnarts, a stimsons python, 3 legless lizards, 5 species of geckoes, 4 species of skink, blind snakes, desert banded snake, king browns, zebra finches, button quail - plus a heap of centipedes, scorpions and crickets.

no one should underestimate their abundance or impact!

Look on facebook for the picture.

<http://www.abc.net.au/radionational/programs/bushtelegraph/feral-animals/4816852>


Feral cats aren't just an urban problem, they are nationwide. Cost plays a major factor in situations like these where populations are enormous and widespread. Baiting with 1080 has proven extremely effective in certain regions for fox control and hopefully will be just as effective for the management of cats.


The whole trap, neuter, release is a farce in my opinion. Even PETA (albeit probably reluctantly) agrees that it is cruel and ineffective. It's a waste of money and resources when the cats should just be trapped and destroyed.

As for rehabbing and re-homing. Another farce and not well thought out idea. There are already thousands of unwanted DOMESTIC cats up for adoption. Why add even more to that problem just to stroke the ego of "I've rescued x number of kitties". It's not a solution.

http://mpegmedia.abc.net.au/rn/podcast/2013/03/bth_20130320_1150.mp3

This podcast is a seriously good informative listen. Two professionals outlining their work with feral cats, the implications and the possible outcomes. It's only short and well worth it.

 0 Reply Quote Report



TAS • Posts: 2263

6 15 Aug 2013

said:

Other options are shooting, baiting and trapping, and although these do cause the animal harm, it is a cheaper, less time consuming and more effective method in controlling these pests.

TNR is the only method of feral cat control that has been proven to work. Trap and kill actually increases feral cat populations. It creates a vacuum effect. You trap and kill a colony, or part of a colony, and neighbouring colonies discover that there is now more territory and resources available, and so they breed and that colony can often exceed double its size. Eventually, you'll end up with more cats than you started with.

When you Trap, Neuter and Return cats, it is your responsibility to find a carer for these cats. The carer must feed and assess the cats (from a distance) daily. Because the cats are being fed, and know where to go for food, they hunt a significantly lower number of animals.

Feral cats have been persecuted by humans for far too long. I've worked with native wildlife, and I've worked with cats. TNR does work, it does reduce feral cat predation. And, in fact, it has been proven that in most situations, cats and native wildlife can co exist.


 + 1 Reply Quote Report

Fig.10Animals Australia Unleashed forum response part 2

3. Further research and discussions

3.1 Impacts of domestic/ stray cats

After my primary sources, I then went on to further research into the topic.

The domestic cat arrived in Australia quite late relative to the rest of the world. The domestic cat were introduced to Eastern Australia and New Zealand between 1824 and 1886¹⁴ by European settlers. However, it has also been suggested that they were brought here earlier by Malays.

Many of the introduced species are also pests (mice, rabbit, and rats) to farms, so in the nineteenth century cats were still considered pest control and were encouraged. In 1886, 400 cats were transported to New South Wales, and in 1899, 200 cats were released in Western Australia.

Only in the 1980s were people aware that cats are a real environmental concern, and public receptions were changing, although it was still a popular companion animal.

The main impacts of cats are their predatory instincts, and even with outdoor cats, who are well fed by their owners, cats like to hunt. The impact of the cat on native species is not yet very clear, since a lot of their prey consists of introduced species such as the house mouse or black rats. Cats mostly prey on species weighing less than 200g, but can also hunt up to 1-2kg.

3.2 Impacts of feral cats

Feral cats kill 75 million native wildlife daily¹⁵, with the total population ranging from 5 to 18 million. The Australia Wildlife Conservancy recognize feral cats as the number one cause for early mammal extinctions as well as the decline of 80 threatened species.

The realisation that feral cats are a danger to the native wildlife is fairly recent (concern was expressed over 130 years ago by Gould¹⁶) so many aspects are still unclear. For example, we do not know the extent of impact feral herbivores have on the native herbivores.

Another aspect that has not been studied in depth is the competitive impact of feral cats on the native predatory species such as the quolls, larger reptiles, and predatory birds. Quolls have the greatest similarity in diet to feral cats and have been noted to coexist in forest and woodland habitats in the eastern, western, and northern parts of Australia. Apart from competition of prey, there is also an overlap on den and habitat requirements. There has been a minor decrease to population and breeding success with the sub-Antarctic skuas since there is predation by feral cats on their prey, the burrowing petrel. But conclusions cannot be drawn from the lack of study done.

¹⁴ Denny, EA, and CR Dickman. *Review of cat ecology and management strategies in Australia*. Canberra: Invasive Animals Cooperative Research Centre., 2010. Print.

¹⁵ "Wildlife Matters." *Feral cats: killing 75 million native animals every night*. Australian Wildlife Conservancy, n.d. Web. 26 Aug 2013.

¹⁶ Dickman, Chris. *Overview of the Impacts of Feral Cats on Australian Native Fauna*. Canberra: Australian Nature Conservation Agency, 1996. Print.

Candidate name:
Candidate number:

Feral cats might also transmit disease to native species. Out of the 100 pathogens found on feral cats, at least 30 have also been recorded on native species. However, there is a lack of information, so the impact is unknown.

3.3 Management Strategies

There are many methods to the eradication of feral cats. Successful programs have all been a combination of multiple methods. On many of the islands, a combination of trapping and poisoning were the preferred methods. Trapping and hunting feral cats have been more successful in eradicating feral cat populations on islands and areas that are fenced off. However, the same methods do not work as efficient for the mainland as the cats are hard to bait and trap.¹⁷ Even when an area has been cleared of cats, it is quickly recolonised.

The three major considerations for any control programme are humaneness, environmental impact, and feasibility (time and cost). On the mainland, the only effective method is to create an island situation where an area is fenced off, this is called exclusion fencing. Inside the fenced area, other methods are carried out to eradicate the cat population.

The effectiveness and humaneness of shooting depends on the skill of the shooter. Shooting is especially effective when dealing with the last few remaining cats on an island. Another common method is trapping, where the cat is trapped and later euthanized. The success rate of trapping depends highly on other factors such as the hunger levels or the weather. Steel-jaw leg hold traps are illegal in most states¹⁸, so padded jaw traps are used. Cage traps are the most common traps, these are humane, and if non target animals are caught, they can be released without being harmed.

1080¹⁹ is an effective poison, it degrades rapidly so causes no environmental damage, although it is not species specific, the method of delivery can make it species specific. 100% mortality rate is achieved if the dose is above 0.4mg/kg. 1080 works by disrupting the Krebs cycle, and death occurs 2 to 12 hours after symptoms have been spotted (symptoms include vomiting, salivation). However, 1080 does not meet the criteria on humane poisoning and research into alternatives is being carried out.

Trap-neuter-release has been suggested, and while this is the most humane method, it does not stop the threat cats have on the native species. The effectiveness of TNR is also questionable as it takes a lot of time.²⁰

In Western Australia, there was a 74% reduction in feral cats through 1080 poisoning in laboratory mice carcasses. Assessment of the effectiveness was made by monitoring radio-collared animals, all of which were killed, as well as spotlight transects. There was a 90% removal of feral/stray cats in 2003 on the Cocos Islands using serialisation of owned cats along with trapping, shooting, and poisoning.

¹⁷ Australian Government. Department of Sustainability, Environment, Water, Population and Communities. *THE FERAL CAT (FELIS CATUS)*. Commonwealth of Australia, 2011. Print.

¹⁸ <http://www.trapping.com.au/StateLeg.php> Shows the different legislation in the different states.

¹⁹ Sodium monofluoroacetate

²⁰ "Problems with Trap-Neuter-Release." . The Wildlife Society, n.d. Web. 26 Aug 2013.

Candidate name:

Candidate number:

Reddiez reported that there are few pest control operation directly that directly targeted cats. While fox control was on a large scale all over the continent, cat control was mainly in the form of conservation plans for threatened species, such as fencing off an area. These were on a smaller scale with the average of 35km².

Conclusion

The overpopulation of feral cats is one of the biggest threats to wildlife in Australia right now, as cats were never truly domesticated to begin with, so they still thrive in environments where there are small prey for them to hunt (as opposed to domestic dogs being less adept at survival without a human owner). Through **"Investigating the social implications, health risks, ecological impact, and ethical issues linked to the overpopulation of feral cats in Australia"** I have become more aware of how urgent the situation is. Although feral cats are a problem all around the world, Australia, New Zealand, and a large number of islands are suffering from the problem on a higher level.²¹ Trap-Neuter-Release plans are the most humane and should be implemented over time, but they are not immediately effective towards the threat cats impose on wildlife. The most effective method would be to kill the cats, which is quite humane if done right.

One of the findings of my investigation is that the cat population was introduced into Australia via human activities, as well as being widely introduced into the wild to act as pest control. And yet here we are having to 'eradicate' the feral cat population that we have brought upon ourselves. I think this is one of the reasons why the issue is so difficult to deal with, as many people including myself regard cats as 'pets', and so the concept of shooting or poisoning on a large scale is hard to accept. It is as if the cats have to pay for our mistake and die? But then on the other hand we have the native wildlife that are being endangered if nothing is done.

The whole topic is fairly new, as the problem was only recently thought of as urgent and should be dealt with. As seen from the forums, awareness is not high in the whole population, and more public discussions should be raised. The lack of information about a national problem is very similar, in my opinion, to the large number of strays that have to be put down each year in Taiwan due to owners underestimating the responsibility of keeping animals. We are responsible for these problems, and we should accept our responsibility and solve them.

As the problem is caused by the consequences of ignorance, and careless actions, I think it would be interesting to research about how such decisions are made. To me it seems like the approach to the feral (and to a certain extent stray) cat problem Australia is mainly reactive. Perhaps there should have been preventive measures taken as well such as education before the situation got to the stage it is at now, as well as investigating the decision making of the past. I am looking to take up psychology in university, and eventually partake in environmental protection schemes.

²¹ Global review

Annotated Bibliography

Books

Safran Foer, Jonathan. *Eating Animals*. Penguin, 2009. Print. A book about the meat industry; touches on domestication and selective breeding. As the feral cat problem is initially caused by humans, just another example of the effect we humans have on animals. This book was the starting point of my extended essay journey, as the meat industry is one of the many problems people has inflicted on animals.

Reports

A. Driscoll, Carlos, Marilyn Menotti-Raymond, and et al. "The Near Eastern Origin of Cat Domestication." . Scienceexpress, 28 Jun 2007. pdf. 15 Jul 2013. (the original report from taming of the cat) A short scientific paper on the ancestors of current domestic cats, goes into detail about DNA.

Gentry, Anthea , Juliet Clutton-Brock, and Colin P. Groves. "The naming of wild animal species and their domestic derivatives." . Journal of Archaeological Science, 15 Oct 2003. Pdf A detailed paper on the naming of domestic species, was not particularly useful to my extended essay, but the information is very interesting.

Publications

"Taming of the Cat." . Scientific American,INC. June 2009. n.d. Web. 15 Jul 2013. Parts of this publication is based on "The Near Eastern Origin of Cat Domestication", it was published more commercially so has pictures and coloured text. Quite detailed and informative; I used this document for details of domestication of cats.

Denny, EA, and CR Dickman. *Review of cat ecology and management strategies in Australia*. Canberra: Invasive Animals Cooperative Research Centre., 2010. Print. A detailed report on the impact of feral cats as well as the many strategies used to eradicate feral cats, it is a factual take on the matter and gave me an unbiased view. The cover image features cats hissing.

Dickman, Chris. *Overview of the Impacts of Feral Cats on Australian Native Fauna*. Canberra: Australian Nature Conservation Agency, 1996. Print. This is a detailed report on the impacts of feral cats in Australia. Although it is slightly older, the information given still applies. Compared to the newer documents we can see progress as the issue is researched more in depth.

Hsu, Yuying, Lucia Liu Severinghaus, and James A. Serpell. "Dog Keeping in Taiwan: " *Its Contribution to the Problem of Free-Roaming Dogs*. Journal of Applied Animal Welfare Science. Pdf.

Australian Government. Department of Sustainability, Environment, Water, Population and Communities.*THE FERAL CAT (FELIS CATUS)*. Commonwealth of Australia, 2011. Print. A brief introduction to the feral cat problem, helpful for the general picture. The Department of Sustainability, Environment, Water, Population and Communities was one of the few organisations that replied to my email enquiries. This is a introductory document that suggested directions for my research.

"Wildlife Matters." *Feral cats: killing 75 million native animals every night*. Australian Wildlife Conservancy, n.d. Web. 26 Aug 2013. A document the Australian Wildlife Conservancy published about the problem and they suggest that fire control may be a big part of wildlife restoration, which no other document I've found have said. The organisation also replied to my email enquiries and gave me a detailed account on fire management.

Candidate name:

Candidate number:

"Problems with Trap-Neuter-Release." . The Wildlife Society, n.d. Web. 26 Aug 2013. An explanation to why TNR is not the preferred method of dealing with feral cat problems. This document was linked to me via one of the forum replies. This document also considers humans as one of the cause to decline in native species.

Websites

"Feral and Stray Cats—An Important Difference." .Web. 15 Jul 2013.
<<http://www.alleycat.org/strayorferal>>.

Candidate name:
Candidate number:

Appendices

Glossary

Domestic – cat living with human companions and is taken care of

Stray – cat that has been separated from its human companions and lives in the 'wild'

Feral – cat that are born and live in the 'wild'

Breeder – an individual/organisation that mass produces animals for sale. Such as puppy mills which breed dogs.

Native species – a species that originates from the area. An example being koalas in Australia.

Invasive species – a species that was introduced through human activity and has an advantage compared to native species by having no natural predators in the new environment, causing the invasive species to outcompete the native species and gain a prominent position. An example being the cane toad brought to Australia by humans.